

**Remarks:**

Claims 1, 5, 6, 8, 12-15, 17, 18, 20, 24-26 and 31 have been amended; claims 11 and 23 have been cancelled and new claims 38-46 have been added. Claims 2-4, 7, 9-10, 16, 19, 21-22 and 28-30 were previously cancelled. Accordingly, claims 1, 5-6, 8, 12-15, 17-18, 20, 24-27 and 31-46 are currently pending for consideration.

**I. Amendments:**

Claims 1, 15 and 31 were amended to recite that treating is accomplished by application of a liquid treating composition containing one of more treating substances reactive to an aldehyde or an isocyanate. Support for these amendments can be found throughout the specification and specifically at page 2, lines 17-19; page 4, line 14 – page 5, line 29; and the examples. No new matter has been added.

Claims 5, 6, 8, 12-14, 17, 18, 20 and 24-26 were amended merely to correct their dependency from other claims. As such, no new matter has been added.

New claims 38, 39 and 40 depend from claim 1 and are directed to planing and treating at least two sides of the assembly and simultaneous treating of the two sides, respectively. Support for these claims can be found in the specification at page 5, lines 6-11. No new matter has been added.

New claims 41-43 depend from claim 1 and are directed to the amount of treating composition applied. Support for these claims can be found in the specification at page 5, lines 17-21. No new matter has been added.

New claims 44-45 depend from claim 1 and are directed to the timing of when the treating composition is applied. Support for these claims can be found in the specification at page 5, lines 25-29. No new matter has been added.

New claim 46 depends from claim 6 and recites that the treating composition includes about 10 to about 60 wt% urea and about 0.03 to about 2 wt% polyvinylalcohol in the form of an aqueous polyvinylalcohol dispersion. Support for this claim can be found in the specification at page 4, lines 14-33 and the examples. No new matter has been added.

## **II. The Invention:**

The presently claimed invention is directed to a method for reducing emissions of one or more gaseous substances, emitted from an exposed glue line of an assembly of at least two pieces of wooden materials which have been glued together (e.g., a glue laminate beam), the one or more gaseous substances belonging to the group of aldehydes or isocyanates. The method includes planing at least one of the sides having glue lines exposed, followed by treating the at least one planed side by application of a liquid treating composition containing one or more treating substances reactive to an aldehyde or an isocyanate. The method according to the invention provides long-lasting effect against aldehyde or isocyanate emissions.

## **III. Rejections:**

### **a. Rejection of Claims 5, 6, 8, 17, 18 and 20 under 35 U.S.C. § 112, second paragraph**

Claims 5, 6, 8, 17, 18 and 20 stand rejected under 35 U.S.C.112, second paragraph, as being indefinite. As these claims have been amended to clarify and/or correct there dependencies, Applicants respectfully submit that the rejections are now moot.

Accordingly, it is respectfully requested that the rejections of claims 5, 6, 8, 17, 18 and 20 under 35 U.S.C. § 112, second paragraph, be withdrawn.

### **b. Rejection of claims 1, 5, 8, 15, 17, 20, 27, 31, 32, 34, 35 and 37 under 35 U.S.C. § 103(a) in view of purported admitted prior art in view of Cannon et al:**

Claims 1, 5, 8, 15, 17, 20, 27, 31, 32, 34, 35 and 37 stand rejected under 35 U.S.C.103(a) as being unpatentable over purported admitted prior art in view of Cannon et al (US 4,376,807). Applicants respectfully traverse.

The Office Action contends that the present specification admits that it was known to produce a laminate wood structure by applying curable adhesive systems between the lamellae, assembling the lamellae, pressing the assembly under heat,

curing the adhesive and planing the surface transversely to the plane of the adhesive application to remove excess adhesive and unevenness. The Office Action further contends that the purported admitted prior art discloses that gaseous substances are emitted from the glue line and the planed surface. Applicants respectfully disagree and submit that the specification clearly indicates that Applicants have found (and does not admit that the prior art discloses) that in laminated beams the exposed glue lines of the newly planed wooden surfaces may emit a significant amount of gaseous substances, such as formaldehyde. (See specification at page 1, lines 23-24).

The Office Action does however acknowledge that the purported admitted prior art is silent regarding treating one or more planed sides with treating substances reactive to the gaseous substances. The Office Action, however, contends that it would have been obvious to treat the planed sides (as claimed) in view of the Cannon et al reference. Applicants respectfully disagree.

The Cannon et al reference is directed to methods for treating formaldehyde laden wood panels to neutralize free formaldehyde existing in the panels by treating at least one side of the panel (parallel to the interior glue line planes) with an ammonium salt solution that will decompose to generate ammonia that will react with the free formaldehyde in the wood. Cannon et al teach that the ammonium salt solution migrates through the porous wood into the interior of the panel so that there is a latent effect of the salt in continuing to generate ammonia long after initial treatment. (See Cannon at col. 2, line 61 to col. 3, line 4). Cannon et al state that it is "an important feature of the invention ... [for the salt] solution to penetrate the porous interstices of the wood product where the resulting ammonia can be entrained." (See Cannon at col. 10, lines 29-36). Cannon et al further teach that the vaporous ammonia will migrate over time away from the degradation zone (the salt solution) in a direction perpendicular to the glue line planes (See Cannon at col. 6, lines 19-54).

Applicants are unaware of any disclosure, teaching or suggestion by Cannon et al that the ammonium salt solution can be applied to any side having exposed glue lines. In fact, Applicants respectfully submit that when read as a whole Cannon et al teach away from such an application. In that regard, Cannon et al clearly teach that it is an important feature of the invention for the salt solution to soak into the wood itself to

get the benefit of the latent effects of the ammonia being produced over time. Applicants respectfully submit that one skilled in the art would have no reason (based on Cannon et al) to apply the solution to the side with exposed glue lines, since the exposed glue lines would interfere with the ability of (or at least reduce the surface area for) the salt solution to penetrate into the wood. Moreover, it is respectfully submitted that (based on Cannon et al) one skilled in the art would appreciate that they would want to have that latent effect of the ammonia acting over the surface area of the glue line plane, which is far greater than the surface area of the exposed glue lines.

Accordingly, it is respectfully requested that the rejections of claims 1, 5, 8, 15, 17, 20, 27, 31, 32, 34, 35 and 37 under 35 U.S.C. § 103(a), as being obvious over purported admitted prior art in view of Cannon et al, be withdrawn.

- c. Rejection of claims 6, 11-14, 18, 23-26, 32, 34, 35 and 37 under 35 U.S.C. § 103(a) in view of purported admitted prior art, Cannon et al and Rohringer:

Claims 6, 11-14, 18, 23-26, 32, 34, 35 and 37 stand rejected under 35 U.S.C.103(a) as being unpatentable over purported admitted prior art in view of Cannon et al, and further in view of Rohringer (GB 2,062,039). Applicants respectfully traverse.

Rohringer is directed to a process for flame proofing hardwood in which the wood is treated with an aqueous formulation under excess static pressure. Applicants are unaware of any disclosure, teaching or suggestion by Rohringer that a treating composition can be applied to the planed side of a laminate assembly having exposed glue lines, let alone any laminate assembly, to reduce gaseous emissions from the assembly (as presently claimed).

Applicants respectfully submit that Rohringer fails to cure the deficiencies with respect to the purported prior art in view of Cannon et al (as discussed above). On this basis alone, it is respectfully submitted that the asserted combination of references (and purported admitted prior art) do not render the current claims obvious.

Accordingly, it is respectfully requested that the rejections of claims 6, 11-14, 18, 23-26, 32, 34, 35 and 37 under 35 U.S.C. § 103(a), as being obvious over purported admitted prior art in view of Cannon et al, and further in view of Rohringer, be withdrawn.

d. Rejection of claim 31 under 35 U.S.C. § 103(a) in view of purported admitted prior art in view of Park:

Claim 31 stands rejected under 35 U.S.C.103(a) as being obvious over purported admitted prior art in view of Park (US 4,678,686). Applicants respectfully traverse.

The Park reference is directed to a process for treating wood panels where the panels are placed in a closed treatment chamber, the chamber is evacuated to remove free formaldehyde from the panel pores and then the chamber is pressurized with a vaporous ammonia and air mixture, so that the mixture permeates the panel pores for the ammonia to react with free formaldehyde remaining in the pores.

Applicants are unaware of any disclosure, teaching or suggestion by Park of applying a liquid treating solution to any side of a wood laminate having exposed glue lines. Applicants further submit that this is also not disclosed, taught or suggested by the purported admitted prior art (as discussed above in section b.).

Accordingly, it is respectfully requested that the rejection of claim 31 under 35 U.S.C. § 103(a), as being obvious over purported admitted prior art in view of Park, be withdrawn.

e. Rejection of claims 33 and 36 under 35 U.S.C. § 103(a) in view of purported admitted prior art, Cannon et al and Hager:

Claims 33 and 36 stand rejected under 35 U.S.C.103(a) as being unpatentable over purported admitted prior art in view of Cannon et al, and further in view of Hager (US 4,597,940). Applicants respectfully traverse.

Hager is directed to a process for preserving or protecting moist wood against attacks from microorganisms (fungi) by treating the wood with evaporable or sublimable ammonium salts.

Applicants are unaware of any disclosure, teaching or suggestion by Hager of applying a liquid treating solution to any side of a wood laminate having exposed glue lines, let alone any laminate assembly, to reduce gaseous emissions from the assembly (as presently claimed).

As claims 33 and 36 depend from claims 1 and 15, respectively, they each require the step of applying the treating composition to at least one planed side of a wood laminate having exposed glue lines. Applicants respectfully submit that Hager fails to cure the deficiencies with respect to the purported prior art and Cannon et al (as discussed above). On this basis alone, it is respectfully submitted that the asserted combinations of references (and purported admitted prior art) do not render the current claims obvious.

Accordingly, it is respectfully requested that the rejections of claims 33 and 36 under 35 U.S.C. § 103(a), as being obvious over purported admitted prior art in view of Cannon et al, and further in view of Hager, be withdrawn.

**Conclusion:**

In light of the foregoing, Applicants respectfully submit that the application as amended, including claims 1, 5-6, 8, 12-15, 17-18, 20, 24-27 and 31-46, is now in proper form for allowance, which action is earnestly solicited. If the Examiner has any questions relating to this Amendment or to this application in general, it is respectfully requested that the Examiner contact Applicants' undersigned attorney at the telephone number provided below.

Respectfully submitted,



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